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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/598,954	06/22/2000	Keita Hara	1248-0505P-SP	5181

7590 03/03/2004
Birch Stewart Kolasch & Birch LLP
P O Box 747
Falls Church, VA 22040-0747

EXAMINER

ZHENG, EVA Y

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 03/03/2004

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/598,954

Applicant(s)

HARA ET AL.

Examiner

Eva Yi Zheng

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 June 2000.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-23 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 6/22/00 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. Figure 18 and 19 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The abstract of the disclosure is objected to because it is lengthy and not concise. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. The claims 1-5, 20, 22 and 23 are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors. For example:

a) Regarding claim 1:

1. Recitation: "present stage, previous stage, and final stage" is unclear and confusion as to which part of the filter circuit it refers to.

2. On line 3-4, phrase: "unit circuits successively transmits to a unit circuit of a following stage" is unclear to which unit circuit it indicates to and the difference between unit circuits and unit circuit.

3. On line 6-13, is confusing since computing means are not clear if they are mutually added in present stage and/or previous stage. What is present stage and previous stage? In addition, what is a final stage, what happens there, and the coefficient value corresponds to what is not exactly clear.

4. On line 14, phrase: "subjected to" is unclear as for how exactly low-bit quantization is in connection with an add value.

b) Regarding claim 20, on line 9-11, recitation: "a first adder for adding the computing result and an output of a correlation computing unit circuit of a previous state" is confusing since the computing result and the relationship between the computing result and output of a correlation computing unit circuit is not clear.

- c) Regarding claim 22, on line 7-12, recitation: "an output of a correlation computing unit circuit of a previous stage" is unclear for its relationship with the computing unit circuits and an added value.
- d) All other independent claims render the same problems as described above.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-5, 20, 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhou et al. (US 6,300,823) in view of Hayashi (5,392,040). (whereby plurality of unit circuits interpreted to be plurality of sampling and holding circuits; previous stage interpreted to be coefficient registers and multiplication circuits; present stage interpreted to be sampling and holding circuits with multiplication circuits; and final stage interpreted to be the final output from adder 70 as shown in Fig.1)

As shown in Fig.1, regarding claims 1-5, 20, 22 and 23, Zhou et al. disclose a filter circuit, in which a plurality of unit circuits (10) are mutually connected in series, computing means in each of said unit circuits successively transmits to a unit circuit of a following stage a computing result of a) an analog input signal sampled at a same sampling timing and b) a coefficient (20)

predetermined for each of said computing means, said computing means mutually adds (40) computing results of a present stage and its previous stage so as to compute in a unit circuit of a final stage a cumulative value (70) of computing results of all the coefficients and time-series analog sampling signals whose number corresponds to that of the coefficients, and the cumulative value is outputted as digital data (abstract; Col 3, L30-55).

Zhou et al. discloses all of the subject matter as described above except for the specifically teaching of a low-bit quantization and a D/A converter.

Hayashi, in the same field of endeavor, teaches a low-bit quantization in a digital-to-analog converter (abstract), as shown in Fig. 5 (Col 7, L23-Col 8, L34).

An analog digital filter (ADF), wherein the analog input signal is directly controlled by a digital signal (Zhou et al.: Col 1, L26-29). Therefore, it would have been obvious to one of ordinary in the art at the time of the invention to combine the ADF circuit by Zhou et al. with the quantization circuit by Hayashi in order to convert digital signal back to analog if desire and providing high conversion accuracy by oversampling.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eva Yi Zheng whose telephone number is 703-305-8699. The examiner can normally be reached on 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax

phone number for the organization where this application or proceeding is assigned is 703-879-9306.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

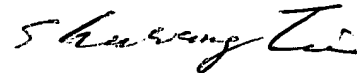
(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121
Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Eva Yi Zheng
Examiner
Art Unit 2634

March 1, 2004



SHUWANG LU
PRIMARY EXAMINER